

Program Commitment Agreement

Discovery Program

March 2003

It is the responsibility of each of the signing parties to notify the other in the event that a commitment cannot be met and to initiate the timely renegotiations of the terms of this agreement.

Agreements:

Associate Administrator for
Space Science

Date

Deputy Administrator

Date

PROGRAM COMMITMENT AGREEMENT DISCOVERY PROGRAM

PROGRAM OBJECTIVES

The Discovery Program is designed to accomplish frequent, high-quality planetary science investigations, using innovative and efficient management approaches. The Program's prime objective is to enhance our understanding of the solar system as it is today and of solar system formation and history. In the process, it seeks to contain total mission cost and development time, and improve performance through the use of validated new technology and through commitment to, and control of, design, development and operations costs. Also, it seeks to enhance public awareness of, and appreciation for, space exploration and to incorporate educational and public outreach activities as integral parts of space science investigations.

The goals and strategies outlined in the Space Science Enterprise Strategic Plan encompass a wide range of scientific questions spanning many scientific disciplines. NASA seeks to address these questions by supporting investigations in several broad categories; however, the Discovery Program solicits only those investigations which lead to flight projects that investigate planetary science. The term "planetary science" encompasses the scientific objectives in the Space Science Enterprise Strategic Plan that address --

- The Solar System Exploration theme, and
- The search for extrasolar planetary systems elements of the Astronomical Search for Origins theme.

Discovery missions are solar system science missions intended for exploration of solar system bodies, either by traveling to them or by remote examination from the vicinity of Earth.

PROGRAM OVERVIEW

The Discovery Program is intended to be a science program of frequent, small spacecraft missions that will perform high-quality focused scientific investigations. The Program is composed of a long-term series of space science missions that are independent, but share a common funding and management structure. The program emphasizes missions that can be accomplished under the control of the scientific research community, and seeks to control total mission life-cycle costs and improve performance through the use of validated new technology, strict control of costs, and more efficient management.

The Discovery Program provides the following two classes of projects:

Missions – complete, self-standing NASA Space Science investigations characterized by definition, development, launch service, and mission operations and data analysis costs not to exceed \$350 million (in Fiscal Year 2003 dollars) total cost to NASA.

Missions of Opportunity (MO) – investigations characterized by being part of a non-Space Science mission of any size, and having a NASA cost under \$35 million (in Fiscal Year 2003 dollars) total cost to NASA. These missions are conducted on a no-exchange-of-funds basis, with the organization sponsoring the mission. NASA intends to solicit proposals for MO with each Discovery Announcement of Opportunity (AO).

PROGRAM AUTHORITY

The Discovery Program is a multiple-project program with responsibility assigned to the NASA Management Office (NMO) located at the Jet Propulsion Laboratory (JPL). Program authority is delegated from the Associate Administrator for the Office of Space Science (AA/OSS) through the Director of the NMO to the Discovery Program Manager. The Program Manager will perform NPG 7120.5B responsibilities with support from the Office of Safety and Mission Assurance (Code Q) and a contracted technical organization such as the Aerospace Corporation. The AA/OSS is the selecting official for individual projects of the Discovery Program.

The Discovery Program and its program management process, including the specific responsibilities at each level, are documented in the Discovery Program Plan, which is currently under revision, a document subordinate to this one that is approved by the AA/OSS. The Space Science Enterprise Program Management Council (EPMC) is the governing PMC for the Discovery Program.

Program level requirements for each project are approved by the Space Science Enterprise and appended to the Discovery Program Plan at the time of project confirmation, prior to the start of project implementation. The Principal Investigator (PI) for each Discovery project is responsible for the overall success of the project, and is accountable to the AA/OSS for the scientific success and to the Discovery Program Manager for the programmatic success.

TECHNICAL PERFORMANCE COMMITMENT

The Discovery Program performance commitment should include the following:

- a. The Discovery Program will launch an average of one mission per 18 months, with a goal of one per year, commensurate with the availability of adequate funding. This performance count will include those Missions of Opportunity selected under a Discovery Announcement of Opportunity (AO). The launch of Missions of Opportunity are as appropriate, based on date selected, funding profiles, and expected launch dates for the host missions.
- b. Discovery Projects shall use a cost effective, domestic, flight-proven Expendable Launch Vehicle (ELV), or they may choose to deploy as a free-flyer from the space

shuttle. Each Discovery AO describes the launch vehicle details or appropriate access to space. OSS provides access to space and launch vehicle funding. These funds are part of the total cost cap for each mission. Foreign launch vehicles may be utilized only if contributed by the foreign organization (on a no-exchange-of-funds basis) and the launch vehicle meets NASA quality and reliability standards. NASA will not purchase launch vehicles from foreign sources unless a proper Presidential waiver is obtained.

- c. For each mission, launch shall take place within 35 months from the start of implementation.

There will be no period of proprietary data rights for Discovery investigations. Mission teams will be allowed a brief validation period for collecting the scientific, engineering, and ancillary data, and validating the scientific data prior to depositing it in the appropriate space science data archival system.

SCHEDULE COMMITMENT

The Discovery Program includes multiple projects. The following table reflects key dates and time frames for the phase transitions for each current project.

Projects	Beginning of Formulation	Approval for Implementation	Launch	End of Prime Mission	Expected Life Cycle Cost to NASA (RY \$M)
<i>Missions</i>					
Stardust	10/94	11/95	2/99	9/06	208.3
Genesis	4/97	9/98	8/01	2/08	258.9
MESSENGER	11/98	6/01	3/04	4/11	335.8
Deep Impact	11/98	5/01	12/04*	3/06	283.8*
Dawn	1/01	9/03**	5/06	7/16	**
Kepler	1/01	11/04**	10/07**	9/12	**
<i>Missions of Opportunity</i>					
ASPERA-3	11/98	10/99	6/03	3/07	6.7

* under review

** firm date or commitment not yet established

NOTE: Life-Cycle Costs above do not include costs for Deep Space Network (DSN) support.

COST COMMITMENT

Life-Cycle Costs are given in the preceding table for each project in development or operations in the Program. The cost commitment for the Discovery Program is reflected in the President's FY 2004 Budget, Integrated Budget and Performance Document (IBPD) for the multiple OSS science themes encompassed by Discovery projects, released on February 3, 2003, and available publicly at <http://www.nasa.gov/about/budget/>. The total Discovery Program budget for FY 2003 through FY 2008 is \$1.521 billion.

ACQUISITION STRATEGY

The Discovery Program has established an acquisition strategy that contracts for whole missions (concept through delivery of the science data and analysis). Strong emphasis will be placed on contracts with performance incentives, especially flight and science

instrument performance. Discovery investigations will be selected through the AO process, where multiple investigations are selected for Phase A Concept Studies with a competitive down select to proceed to the Phase B part of Formulation. Investigations will typically be selected to proceed from one phase to the next through execution of contract options based on successful technical, cost and schedule performance in the previous phases. A Confirmation Review with the Space Science EPMC will be held at the end of Formulation, soon after the Preliminary Design Review (PDR), to determine whether to confirm the mission to enter Implementation. The NASA AA/OSS will make all final decisions to proceed to follow-on phases.

HIGH RISK AREAS

Technical, managerial and monetary risks for each Discovery investigation will be carefully examined as part of the selection process, and accepted risks documented in individual Project Appendices attached to the Discovery Program Plan. All technical and programmatic risks will be further reviewed as part of the project Confirmation Review conducted during the PDR timeframe to assure risks have been mitigated to an acceptable level prior to entering detailed design and development.

INTERNAL AGREEMENTS

The Langley Research Center will support the AO and evaluation process. The Kennedy Space Center (KSC) will support the AO and evaluation process in the area of launch services, as well as provide government furnished services and products to approved Discovery projects. Each project will be supported by KSC as defined in individual project documentation.

EXTERNAL AGREEMENTS

There are no external agreements for the Discovery program. External agreements for individual Discovery projects will be generated when necessary and are referenced in the Project Appendices to the Discovery Program Plan.

INDEPENDENT REVIEWS

An Independent Review Team (IRT) has been created for the Discovery Program, and an Independent Implementation Review (IIR) of the program will be conducted annually by the IRT. A Confirmation Review for each project substitutes for the Non-Advocate Review (NAR).

As a selected Discovery project nears the end of its Formulation phase, the Discovery Program Office will organize and implement an independent confirmation assessment of the project's readiness to transition into Implementation.

Since Discovery projects are selected through a competitive proposal process and firm cost caps are established upon selection, if at any time during Implementation of a project, the estimated cost-to-complete exceeds the firm cost cap, the Discovery project is subject to a termination review. Cost increases that are completely beyond the control of the Principal Investigator and Project may be an exception that could result in an increase to the cost cap, subject to approval by the AA/OSS, without causing a termination review. Such increases would be documented in the appropriate Program Plan appendix. Any changes to the overall Discovery Program costs will be reflected in an approved change to the PCA.

TAILORING

The requirements of NASA Policy Directive 7120.4B and NASA Procedures and Guidelines 7120.5B are tailored to effect frequent, low-cost, focused space science missions that will perform high-quality scientific investigations. The Discovery Program has adopted a streamlined program management structure, with NASA oversight and reporting requirements limited to what is essential to assure agreed upon science return in compliance with committed cost, schedule, and performance requirements. Investigator teams will be allowed to use their own processes, procedures, and methods to the fullest extent practical, and are encouraged to develop and implement new ways of doing business when cost, schedule, and technical improvements can be achieved.

Additional project-specific tailoring will be documented in the relevant Project Appendix to the Discovery Program Plan.

PCA ACTIVITIES LOG

Date	Event	Change	Addendum	Cancellation Review Req'd	EAA Signature	Administrator Signature
2/21/03	Update to reflect 7120.5B	Entire Document		No		

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